### (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

## (19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 9 September 2005 (09.09.2005)

#### (10) International Publication Number WO 2005/083369 A1

(51) International Patent Classification7:

G01F 1/66

(21) International Application Number:

PCT/CA2005/000321

- (22) International Filing Date: 25 February 2005 (25.02.2005)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2,459,091

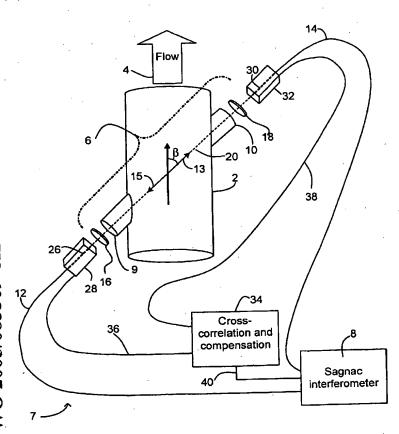
26 February 2004 (26.02.2004)

- (71) Applicant (for all designated States except US): PHOTON CONTROL INC. [CA/CA]; 8540 Baxter Place, Burnaby, British Columbia V5A 4T8 (CA).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): MELNYK, Ivan [CA/CA]; 604 Cottonwood Avenue, Coquitlam, British Columbia V3J 2S4 (CA).

- (74) Agents: MCGRUDER, David, J. et al.; Oyen Wiggs Green & Mutala, 480 - 601 West Cordova Street, Vancouver, British Columbia V6B 1G1 (CA).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  $PH,\,PL,\,PT,\,RO,\,RU,\,SC,\,SD,\,SE,\,SG,\,SK,\,SL,\,SM,\,SY,\,TJ,$ TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: FIBER OPTIC FLOW SENSING DEVICE AND METHOD



(57) Abstract: The invention provides an optical flow meter for measuring fluid flow through a pipe which obviates the need for the flow to be seeded with foreign particles. The meter comprises a fiber optic Sagnac interferometer with optical path crossing the flowing The interferometer measures fluid. velocity of the fluid by measuring the phase difference between the two beams propagating in the optical path in opposite directions. Light, which is deflected by the fluid, is collected by optical means at both sides of the optical path for calculation, the scintillating statistics and compensation for light intensity.

WO 2005/083369 A1 IIIII

# WO 2005/083369 A1



FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

#### Published:

with international search report